

WE CLAIM:

1. An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) with a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver, and a plurality of remote stations, with each remote station (RS) having an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver, the method comprising the steps of:

transmitting from said BS-spread-spectrum transmitter located at said base station, a broadcast common-synchronization channel having a common chip-sequence signal common to the plurality of remote stations, the broadcast common-synchronization channel having a frame-timing signal;

receiving at a first RS-spread-spectrum receiver the broadcast common-synchronization channel, and determining frame timing at said first RS-spread-spectrum receiver from the frame-timing signal;

transmitting from a first RS-spread-spectrum transmitter an access-burst signal, the access-burst signal having a collision-detection portion;

receiving at said BS spread-spectrum receiver the access-burst signal, including the collision-detection portion;

transmitting from said BS-spread-spectrum transmitter to said first RS-spread-spectrum receiver, responsive to receiving the access-burst signal with the collision-detection portion, a collision-detection signal, the collision-detection signal including the collision-detection portion from the

access-burst signal;

receiving at said first RS-spread-spectrum receiver  
the collision-detection signal with the collision detection  
portion; and

transmitting from said first RS-spread-spectrum  
transmitter, responsive to receiving the collision-detection  
signal, to said BS-spread-spectrum receiver, a spread-spectrum  
signal having data.

2. An improvement to a code-division-multiple-access  
(CDMA) system employing spread-spectrum modulation, with the  
CDMA system having a base station (BS) with a BS-spread-  
spectrum transmitter and a BS-spread-spectrum receiver, and a  
plurality of remote stations, with each remote station (RS)  
having an RS-spread-spectrum transmitter and an RS-spread-  
spectrum receiver, the method comprising the steps of:

transmitting from said BS-spread-spectrum transmitter  
located at said base station, a broadcast common-  
synchronization channel having a common chip-sequence signal  
common to the plurality of remote stations, the broadcast  
common-synchronization channel having a frame-timing signal;

receiving at a first RS-spread-spectrum receiver the  
broadcast common-synchronization channel, and determining frame  
timing at said first RS-spread-spectrum receiver from the  
frame-timing signal;

transmitting from a first RS-spread-spectrum  
transmitter a first access-burst signal, the first access-burst

signal having a collision-detection portion;

receiving at said BS spread-spectrum receiver a collision of the first access-burst signal with a collision access-burst signal, thereby not receiving the collision-detection portion of the first access-burst signal;

transmitting from said BS-spread-spectrum transmitter to said first RS-spread-spectrum receiver, responsive to receiving the collision of the first access-burst signal with the collision access-burst signal, a collision-detection signal without reflecting the collision-detection portion;

receiving at said first RS-spread-spectrum receiver the collision-detection signal without the collision detection portion; and

transmitting from said first RS-spread-spectrum transmitter, responsive to the collision-detection signal without the collision-detection portion, to said BS-spread-spectrum receiver, a second access-burst signal.

3. An improvement to a code-division-multiple-access (CDMA) system employing spread-spectrum modulation, with the CDMA system having a base station (BS) with a BS-spread-spectrum transmitter and a BS-spread-spectrum receiver, and a remote station (RS) with an RS-spread-spectrum transmitter and an RS-spread-spectrum receiver, the improvement comprising:

a BS spread-spectrum transmitter located at said

base station, for transmitting a broadcast common-synchronization channel having a common chip-sequence signal common to the plurality of remote stations, the broadcast common-synchronization channel having a frame-timing signal;

a first RS-spread-spectrum receiver, located at a first remote station of the plurality of remote stations, for receiving the broadcast common-synchronization channel, and determining frame timing at said first RS-spread-spectrum receiver from the frame-timing signal;

a first RS-spread-spectrum transmitter, located at said first remote station of said plurality of remote stations, for transmitting an access-burst signal, the access-burst signal having a collision-detection portion;

said BS spread-spectrum receiver for receiving the access-burst signal, including the collision-detection portion;

said BS-spread-spectrum transmitter for transmitting to said first RS-spread-spectrum receiver, responsive to receiving the access-burst signal with the collision-detection portion, a collision-detection signal, the collision-detection signal including the collision-detection portion;

said first RS-spread-spectrum receiver for receiving the collision-detection signal with the collision detection portion; and

said first RS-spread-spectrum transmitter for transmitting, responsive to the collision-detection signal, to said BS-spread-spectrum receiver, a spread-spectrum signal having data.

4. An improvement to a code-division-multiple-access ✓  
(CDMA) system employing spread-spectrum modulation, with the  
CDMA system having a base station (BS) with a BS-spread-  
spectrum transmitter and a BS-spread-spectrum receiver, and a  
remote station (RS) with an RS-spread-spectrum transmitter and  
an RS-spread-spectrum receiver, the improvement comprising:

a BS spread-spectrum transmitter located at said  
base station, for transmitting a broadcast common-  
synchronization channel having a common chip-sequence signal  
common to the plurality of remote stations, the broadcast  
common-synchronization channel having a frame-timing signal;

a first RS-spread-spectrum receiver, located at a  
first remote station of the plurality of remote stations, for  
receiving the broadcast common-synchronization channel, and  
determining frame timing at said first RS-spread-spectrum  
receiver from the frame-timing signal;

a first RS-spread-spectrum transmitter, located at  
said first remote station of said plurality of remote stations,  
for transmitting an access-burst signal, the first access-burst  
signal having a collision-detection portion;

said BS spread-spectrum receiver for receiving a  
collision of the first access-burst signal with a collision  
access-burst signal, thereby not receiving the collision-  
detection portion of the first access-burst signal;

said BS-spread-spectrum transmitter for transmitting

to said first RS-spread-spectrum receiver, responsive to receiving the collision of the first access-burst signal with the collision access-burst signal, a collision-detection signal without the collision-detection portion;

30            said first RS-spread-spectrum receiver for receiving the collision signal without the collision detection portion; and

35            said first RS-spread-spectrum transmitter for transmitting, responsive to the collision-detection signal without the collision-detection portion, to said BS-spread-spectrum receiver, a second access-burst signal.

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A1

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C9

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